UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

STEPHEN MCCOLLUM, *et al.*,	§	
Plaintiffs,	§	
	§	
v.	§	**CIVIL NO. 4:14-CV-3253**
	§	
	§	
BRAD LIVINGSTON, *et al.*,	§	
***Defendants*.**	§	

Exhibit 2

OPINION OF DEAN RIEGER MD MPH
Stephen McCollum et al v. Brad Livingston et al
USDC Northern District of Texas, Dallas Division
No. 4:14-cv-03253

Background and Qualifications:

I am a physician currently licensed to practice in 26 states in the United States. I am not licensed to practice in Texas.

I attended Medical School at the Johns Hopkins University School of Medicine in Baltimore graduating in 1974, completed a medicine internship at the State University of New York at Stony Brook hospital site in Nassau County in 1975, completed a House Officer II year in psychiatry at the University of Michigan in 1976, completed a Master's Degree in Public Health at the University of Michigan in 1981, and completed a Fellowship in Preventive Medicine and Public Health in 1982. I was Board Certified in Preventive Medicine and Public Health in 1985 and remain so.

I have been working in various capacities in correctional health care almost continuously since 1977, including direct care, administrative, and supervisory responsibilities in both jails and prisons, and including individual facilities ranging from a few hundred beds to ones with more than five thousand beds. During my 12 years as State Medical Director for the Indiana Department of Correction I wrote policy and procedure to help mitigate risks regarding the development of heat stress injury and assisted in training and education as part of the implementation process.

I currently serve as the Deputy Chief Clinical Officer for Correct Care Solutions, LLC, a company that, as part of its activities, provides patient care services to approximately 250,000 jail and prison beds in almost 40 states. My current responsibilities include developing policies, procedures, and processes; supporting the continuous quality improvement program, onboarding new personnel, and in-house consultation to our legal department. (I am in the process of moving into a semi-retired status.)

For additional information about my qualifications and experience please see my curriculum vitae, which is attached.

I have been retained to review this case on behalf of the Texas Department of Criminal Justice (TDCJ) and its employees.

Compensation for Services:

I am currently receiving $350 per hour for consultation services and $175 per hour for time in travel, and am reimbursed for receipted expenses.

Recent testimony:

During the past four years I have provided deposition or trial testimony in the following cases:

- Lowe v Vadlamudi et al 2:08-cv-10269 (Deposition 2012)
- Raymond E Jones v Correctional Medical Services Inc. et al (Deposition 2013)

Documents and material reviewed in preparation of this report:

In developing this report and forming my opinions I have reviewed and relied upon various documents and materials, and upon my training and experience as a physician. The documents and materials are listed in the first attachment.

Introduction:

This report will address the following areas:

- Summary of the care provided to Mr. Lawrence Eugene McCollum by
  - McLennan County Sheriff's Office (McLennan)
  - University of Texas Medical Branch (on site care provider delivering direct patient services to the TDCJ inmates)
  - Parkland Hospital
- Organization of the health services delivery team and the care delivery structure, including comparison to national standards
- Heat stress injury, heat stress injury mitigation practices, and Mr. McCollum
- Roles of correctional officers and supervisory personnel in the delivery of clinical services to inmate patients
- Response to selected portions of Plaintiff's expert reports
- Response to selected issues and paragraphs from the 2nd Amended Complaint
- Summary of major opinions

It is important to remember that personnel can only act on the information available to them at the time they are making decisions. It is inappropriate, for example, to use information we have today and review employees' decisions as if that information was available to them when they took action, if that information was not reasonably available to them at the time.

All of my expressed opinions are held to a medical certainty unless specified otherwise.

Summary of the care provided to Mr. Lawrence Eugene McCollum by McLennan County Jail, University of Texas Medical Branch (during confinement), and Parkland Hospital:

Mr. McCollum was confined by the McLennan County Sheriff's Office on or about 6/23/11. While there he received health screening and other clinical services. Notably he was found to be obese (333 pounds, 5'11") and to have elevated blood pressure. Although he had a prior history of treatment for mental illness, he did not exhibit a current need for treatment and specifically denied suicidal or homicidal ideation. Mr. McCollum remained in this short stay detention facility until his transfer to the Hutchins State Jail (HSJ) on or about 7/15/11. During his stay at McLennan he received "PRN" treatment for hypertension with clonidine on 4 occasions. While there he was not provided with any activity or placement restrictions (McCollum 1478).

When he arrived at the HSJ on or about 7/15/11 he came with a completed "Texas Uniform Health Status Update," which communicated the history of hypertension treated with PRN clonidine and

specifically noted the absence of housing restrictions. McLennan did not restrict Mr. McCollum to a bottom bunk.

On the same date clinical personnel performed intake receiving screening. Mr. McCollum endorsed a personal health history including back problems, dental caries, high blood pressure, depression (mental illness), diabetes, and arthritis. He also indicated that he had two current health problems, "tooth pull (sic)" and "depression." A mental health screening was also performed and Mr. McCollum did not present any current behavioral abnormalities. Routine appointments for general medical and mental health review were set up. The receiving screening was performed by a staff member and reviewed by a registered nurse.

Routine infectious disease screening was carried out and Mantoux TB skin test screening was applied.

A physician assistant was contacted to review the use of clonidine PRN as an antihypertensive. Based upon the more usual and customary treatments advised by the Joint National Committee (the national standard for treatment of hypertension), the physician assistant declined use of clonidine and provided a low dose of hydrochlorothiazide (25 mg daily). Mr. McCollum was anticipated to receive a routine history and physical examination ("health assessment) within 7 days. Providing a health assessment within 7 days of intake was consistent with the recommendations of both the National Commission on Correctional Health Care and the American Correctional Association, the two agencies which promulgate practice standards for health services in correctional settings. Mr. McCollum was removed from the HSJ by ambulance before this 7-day period had expired.

Mr. McCollum was not identified as requiring any housing or activity restrictions.

One of the interventions routinely carried out as part of the HSJ intake processing was instruction regarding how to obtain access to health care services. Inmates also received an inmate handbook which further provides information regarding access to health care services and which explained how to file grievances. Mr. McCollum was assigned to a dormitory housing unit and provided with an upper bunk.

For some days Mr. McCollum managed to get up and down from his bunk; from the health record alone we know that he attended certain health care screening functions including meeting with the mental health clinician, meeting with the phlebotomist, and having completed his tuberculosis skin test. (I did not research his participation in classification activities.)

On 7/19/11 Mr. McCollum was evaluated by mental health personnel (McCollum 1480-1483). He reported having been treated for depression on an inpatient basis (during approximately 2002-2004) and with the antidepressant Zoloft in 2009. He was noted to appear sad ("teary-eyed") and to exhibit poor physical hygiene. The master's level mental health clinician determined that further care would be appropriate but not urgent and Mr. McCollum was scheduled for follow up on 7/29/11.

To this point in the confinement no vital signs had been obtained and the only weight in the record was that recorded by McLennan personnel.

On 7/20/11 a "health summary for classification was completed. It reflected a weight of 330 pounds and a height of 70 inches. No housing, work, or facility restrictions were identified as being necessary.

Also on 7/20/11 routine blood and urine testing was obtained, with results reported in the morning of 7/21/11. As described during deposition, the review of these results by a prescriber would take place within 1 or 2 business days, with the results having been sent by chart email to the responsible prescriber. In this case Tito Orig MD would have received these results for review. No panic values were noted and there was no flag indicating a need for any urgent review. Routine review of the laboratory reports would have accompanied the scheduled physical examination. This was appropriate.

According to other inmates in the dormitory, Mr. McCollum began to stop going to meals and to stop getting up to obtain water for approximately the 2 days before he seized and was taken off site. HSJ does not monitor meal participation beyond simple card swipes when inmates enter the chow hall. Meal participation is optional and many offenders often opt to skip meals and eat commissary items in their dorm areas.

As has been discussed by experts serving both Plaintiffs and Defendants, the laboratory results were abnormal and suggestive of mild dehydration, and possibly of a urinary tract infection. The results did not come to the attention of Dr. Orig on 7/21/11 and by the next morning Mr. McCollum was in the hospital.

The following timeline covering during the early morning hours of 7/22/11 is approximated from McCollum 1490 - 1492, 1589 – 1591, and 1650 - 1657:

1. At approximately 0210 Officer Richard Clark was approached by another inmate who reported that his "cellie" was shaking. (It should be noted that at his deposition, p 64, Officer Clark testified that he had not actually consulted his watch.) Officer Clark then ran to the picket and requested that a supervisor be called and a camera be brought; Officer Clark then returned to Mr. McCollum's bunk and stayed to help make sure Mr. McCollum did not fall from his bunk.
2. The picket officer, Adetoun Jolayemi, called for the supervisor, additional staff, and a camera after being requested by Officer Clark to do so.
3. Sergeant Karen Tate then arrived at the scene a few minutes after receiving the radio call (Tate deposition p 57) at and attempted unsuccessfully to communicate with Mr. McCollum, who continued to seize.
4. Lieutenant Sandrea Sanders arrived at the scene at about approximately 0240 hours and found Mr. McCollum still shaking. Lieutenant Sanders contacted the on-call clinical support staff and reported the situation to Gina Stokes RN, who was providing support from the Crain Unit.
5. Ms. Stokes responded by advising that Mr. McCollum should be transported by emergency medical services (911) to the hospital.
6. 911 was called and reported at 0300, and left with Mr. McCollum to transport him to the hospital 20 or 30 minutes later.

It is clear both from what these housing and security personnel did and how they testified during their depositions that all of them were trying to do the best they could on Mr. McCollum's behalf.

Despite the drama that they create, seizures are not in and of themselves medical emergencies. Simple grand mal seizures last a matter of minutes and are followed by a period of 10 – 15 minutes during which the patient may be confused, the so-called post-ictal state. Status epilepticus or seizures secondary to trauma or strokes are medical emergencies. Correctional officers would not be expected to understand these distinctions and should not be faulted for wanting to discuss Mr. McCollum's state before determining what to do next.

Similarly, the determination that heat stroke has occurred is not simple and obvious, especially in a hot dormitory unit. Heat stroke has been discussed repeatedly by the experts in this case, both in reports and at deposition, and will not be discussed in detail again here. However, the body temperature that is important in heat stroke is the **core** body temperature, not the **skin** temperature. And core temperature would be difficult or impossible for security personnel to determine. The presence of a seizure in a housing unit during the "cool" period of the day and during sedentary activity would not be expected to trigger thoughts of heat stress injury in the minds of laypersons concerned with the ongoing seizure and keeping Mr. McCollum from falling from his bunk.

Mr. McCollum arrived at Parkland Hospital sometime after 0330 and was noted to be in a deep coma with (core) hyperthermia. Additionally he was noted to be in renal failure (probably due to dehydration), to have rhabdomyolysis (breakdown of skeletal muscle, probably due to the combination of the heat and the prolonged seizure, and potentially contributing to renal failure), to have respiratory insufficiency requiring ventilator support, and to have other findings consistent with shock. He was treated with ice and cooling, and support for correction of fluid and electrolyte imbalances; many of the abnormalities resolved. However, he had already experienced significant brain damage and was thought to have a "zero" chance of significant recovery and only a tiny chance of recovery even to the point of severe disability. Faced with this situation, his family elected to withdraw all care other than comfort and palliative care, and Mr. McCollum died on 7/28/11 just before midnight.

At autopsy the pertinent findings included:

- There was evidence of head trauma including a 3 cm hemorrhage in the left temporalis major muscle, a 4 cm hemorrhage immediately inferior to the left external ear, and assorted contusions on the chest, abdomen, and leg. Nothing in the history either at HSJ or at Parkland Hospital explains these contusions. The brain did not demonstrate hemorrhages in the epidural, subdural, or subarachnoid spaces, or in the brain parenchyma itself. To this day this bruising remains unexplained.
- The heart was markedly enlarged although there was no significant atherosclerosis.
- The kidneys appeared grossly normal and on microscopic evaluation were also normal (there was no evidence of damage from diabetes).

The pathologist concluded that Mr. McCollum died from hyperthermia.

(Of additional interest, the pathologist cited the Parkland emergency room finding of Mr. McCollum's temperature being 109.4; this was not the temperature upon presentation to the emergency room. That was recorded as about 104. This is a technicality but is worth noting.)

Plaintiffs have noted that on the last evening count on 7/21/11, before he seized, Mr. McCollum's identification card was presented to the count officer by a bunkmate. This practice is permitted. The count officer is required to assure that the identified inmate is present. Provided an inmate can be positively identified, the officer is not required to wake up the sleeping inmate.

Comment regarding organization of the health services delivery team and the care delivery structure, including comparison to national standards:

There are several models for health services delivery commonly seen in the correctional environment. They are as follows:

- Self-operated. In this model the facility or agency (which can be an entire department of corrections) retains complete control of the health services delivery process, including policy and procedure, hiring and management of staff, and delivery of all services.
- Private vendor. In this model the facility or agency contracts portions or all of the health services delivery processes to one or more private corporations.
- University model. In this model the facility or agency contracts portions or all of the health services delivery process to a university. This is most typically seen when a state system contracts with a state-run university which includes a medical school.

It is the third model which is present in Texas, and it is through a contractual arrangement that the University of Texas Medical Branch provides health services to HSJ.

No matter which model is utilized, the facility or agency retains ultimate responsibility for the care delivered, and the care delivered must meet Constitutional standards.

The basic standards from which the minimal requirements for a Constitutional system arise are found in the decision Estelle v. Gamble, which was published in 1976. This report will not presume to describe what this means other than to reflect that it prohibits "deliberate indifference to an inmate's serious medical needs." Nothing exempts a facility or agency from meeting this standard.

Access to health care services for inmates is different from that in the community and is actually quite open. In the community, access is limited by a patient's ability to obtain an appointment and pay for it, or to obtain access to an emergency room. Routine appointments often require waits of many days or weeks, or (in the case of specialist referral) even months. In the correctional setting access begins with a health screening carried out "immediately" upon entry into the facility. This screening includes direct interview with the inmate and review of the materials that arrive with the inmate (in the case of Mr. McCollum, the health summary materials from McLennan). The purpose of this screening is to identify immediate inmate needs and provide care in a continuous manner. The screening can result in emergent, urgent, or routine referrals, or no referral at all. After the screening, routine testing and vaccination is carried out and provided, and the patient is scheduled for a more thorough history and physical examination, called a health assessment. The health assessment is carried out within 7 days of arrival to the facility. Every inmate arriving from a non-TDCJ facility has both the receiving screening and the health assessment carried out (unless the inmate has recently had a TDCJ health assessment, in which case this may be omitted). The performance of a receiving screening upon entry and a health assessment within 7 days of arrival is fully consistent with expectations within most or all prison systems in the United States and with standards established by national organizations advocating for care quality in prisons.

Inmates with identified chronic diseases such as diabetes and hypertension will have appointments made for them with primary care clinical personnel; these appointments will recur on a periodic basis even without the inmate's direct involvement in requesting them.

All inmates are provided with information regarding how to access care on their own. Routine care is requested through a triage system that begins with a written sick call request provided to nursing personnel and reviewed daily, with the nurses acting as gatekeepers and determining whether the care can be provided by nursing contact or requires referral to a higher level provider capable of making a

diagnosis and prescribing medications. If the written request suggests an urgent need, then the triage nurse arranges for it.

Emergency care is available at all times by many routes; self-referral, officer referral, clinician referral, calls from outside parties, and even referrals from other inmates. (An example of this latter occurrence was the referral of Mr. McCollum by an inmate when Mr. McCollum was shaking in bed on 7/22/11.)

The American Correctional Association (ACA) has established standards which, if met, make it likely that a system or facility will be able to provide care at a reasonable Constitutional level. These standards recognize receiving screening and health assessment as reasonable methodologies for newly/recently confined inmates and similarly recognize the chronic care and tiered sick call processes briefly described above. These services briefly summarize the access to care available to Mr. McCollum while he was at HSJ.

In Texas there is another set of expectations, and that is the stipulations to which Texas and the TDCJ agreed in Ruiz. This agreement included requirements regarding heating and ventilation. The Ruiz stipulations were accepted by the Plaintiffs, TDCJ, and the Court; it is reasonable for the TDCJ to believe that when it met the Ruiz stipulations regarding heating and ventilation at HSJ, it was meeting Constitutional requirements.

The following therefore summarizes the underlying understanding of TDCJ regarding the status of HSJ:

- The facility is ACA accredited – it met the applicable health care and ventilation standards
- The facility met the Ruiz stipulations
- The facility met the health care and ventilation standards as suggested by national and federal considerations as necessary to meet Constitutional requirements

Heat stress injury, heat stress injury mitigation practices, and Mr. McCollum:

In 2011 Texas experienced an unexpected and unusually severe heat wave. Irrespective of the heat wave, however, Texas experiences high heat every summer. Mr. McCollum was the first TDCJ inmate to experience heat stroke during the heat wave of 2011.

Heat accumulates in the body in the following ways:

- Metabolism, including the chemical processes and energy required for cells and organs to live
- Exercise, which creates heat both by increasing local metabolism and by friction
- Ingestion of hot liquids such as coffee or tea, which are excreted at the cooler core body temperature and increase the body's heat load
- Exposure to sunlight, which results in the absorption of electromagnetic energy by the skin and its conversion into heat
- Exposure to hot air (by direct contact or inhalation of environmental air at a temperature that exceeds core body temperature)
- Insulation, whether that is clothing or thickened layers of fat

Heat is dissipated in the following ways:

- Evaporative cooling by sweat, facilitated by air movement
- Ingestion of cool liquids followed by urination (or defecation) with the warmer liquid discharged

at core body temperature
- Radiation
- Vasodilation in the skin (increasing the skin temperature toward core body temperature by increased blood at core body temperature, increasing heat dissipation by convection, radiation, and/or evaporative cooling)
- Exhalation of air at core body temperature and inhalation of air at an environmental temperature below core body temperature
- Simple convection when the surrounding temperature is below the skin temperature

Severe heat stress injury results when the body's heat gain exceeds the body's heat loss and core body temperatures rise to a level that causes metabolic functions (and vital organs) to fail. Mitigation to reduce the risk of heat stress injury relies upon two basic truths; reduce the accumulation of heat and/or facilitate heat dissipation and the risk is reduced.

The development of the heat index (utilized by the TDCJ and repeatedly referenced by Plaintiff's experts) takes two factors into account to estimate risk, temperature and relative humidity. (Interestingly, Plaintiff's experts have deemphasized the fact that, with a fixed amount of water in the air, as temperature rises humidity falls. The relationship between heat and humidity is actually complex.)

Increases in environmental temperature with all other factors held constant result in the body's heat accumulation by direct contact; similarly increases in relative humidity with all other factors held stable result in the same outcome by decreasing the effectiveness of cooling by evaporation of sweat once maximal evaporation rates have been reached.

In order safely to manage and house TDCJ inmates exposed to hot temperatures (and for the purposes of this report I will be referring only to TDCJ inmates resident in the HSJ), TDCJ has many options available, and not just the two factors which are used in the heat index. Modification of any of the factors or processes listed here will contribute to mitigation of the risk of heat stress injury:

- Acclimatization (modification of the way the body responds to heat, including more efficient metabolic processes and more efficient management of fluid and electrolytes); acclimatization takes 2 or 3 weeks on average, depending upon exposure to heat. (While acclimatization will help protect inmates from heat stress injury, anything that interferes with acclimatization will increase the risk of heat stress injury.)
- Reducing the duration and intensity of physical activity, including work and play
- Exposure to cool air
- Exposure to cool water (please note that water is far more effective at removing heat by convection than is air)
- Exposure to dehumidified air (improves the efficiency of sweat evaporation)
- Exposure to moving air (improves the efficiency of sweat evaporation even when temperature rises above body temperature, with effectiveness limited by relative humidity)
- Avoidance of sunlight (reduces heat gain)
- Wearing fewer clothes and exposing more skin (improves the efficiency of radiation and of sweat evaporation)
- Wearing fewer clothing layers (reduces insulation which improves convective and radiative heat loss and may make more sweat available for evaporation where clothing is present)

This is a reasonable list, and TDCJ at the HSJ utilized most of these above-listed interventions to help mitigate risk for heat stress injury. My underlying point is that there are many reasonable interventions that the TDCJ could and did implement at HSJ in advance of the summer of 2011. Cool (refrigerated) air, the mitigation intervention one of the Plaintiff's experts claim TDCJ should have implemented at HSJ, was only one option out of many.

As is obvious, some of the above-described potential interventions are environmental/or engineering modifications, some are administrative interventions, and some require the active participation and actions of a competent inmate. The following documents are cited to describe what the TDCJ had in place in advance of Mr. McCollum's brief stay at HSJ:

- Correctional Managed Health Care Policy B-15.2 "Heat Stress" 11/07
- Heat Precaution Reminder 2011 (5/6/2011) TDCJ 4805-4825
- TDCJ Operational Procedure/Hutchins Unit April 15,2012 Extreme Heat Precautions
- TDCJ Administrative Directive AD-10.61 (rev 6) 11/10/2008

Some of the TDCJ interventions included access to cool and/or iced drinking water, decreased activity levels, reduction in required clothing, increased use of fans, increased access to showers, cooler showers, and training and alerting personnel and inmates regarding the risk. Mitigating interventions were employed and implemented by the TDCJ based upon knowledge of actual and forecasted temperatures, and frequent checks of the heat index.

Most of the personal or patient characteristics which are identified as creating increased risk for heat stress injury are not well defined. It is, however, intuitively obvious that characteristics which directly impact heat accumulation or dissipation are very likely to affect this risk. Examples of such characteristics (and this list could be greatly enlarged) include

- The hyperthyroid state (which results in an increased metabolism)
- An increased body mass index (whether from obesity or heavy musculature, which results in a decreased surface to volume ratio and therefore in a relative decrease in the amount of skin available for evaporative cooling)
- Use of medications which impair sweating or lead to significant dehydration
- Psychotic disorders (which can affect a patient's interest in fluids)
- Depression with inanition

These characteristics do not lead to simple changes in risk management. With all of these there is no "on-off" point before which there is no increase in risk and beyond which risk abruptly rises; in fact, there is actually no point at which one can even state to a medical certainty that risk begins to rise.

Let's consider Mr. McCollum:

- Mr. McCollum was morbidly obese. It is more likely than not that his surface to volume ratio was decreased and affected his ability to lose heat through evaporative cooling. It is also more likely than not that his obesity also resulted in a relative increase in insulation of his body core.
- Mr. McCollum was noted to be somewhat depressed but was not psychotic, nor did he exhibit inanition (at least prior to the last two days of his confinement); therefore, he could be expected to experience and respond to thirst in a normal manner.

- Mr. McCollum was thought to be hypertensive when at McLennan, but even this is uncertain. (Without documentation that an obesity cuff was, used there remains the possibility that the recorded elevated readings were spurious.) Additionally, it is not uncommon for newly confined inmates to evidence somewhat elevated blood pressures during their first month or two of confinement, and to evidence this again with housing moves.
- Mr. McCollum was prescribed hydrochlorothiazide 25 mg daily when at the HSJ. There are no records that he ever picked it up or took it.
    - If he picked it up at medication distribution, the dosage (which was mid-range in commonly employed dosages: 12.5, 25, or 50 mg daily), was not high enough to have a large effect on his fluid and electrolyte status. Even if he was taking it, his cell mates claim that he did not leave the housing unit during the last days he spent at the HSJ, and any effects that it may have had were dissipated. This usage was, to a medical certainty, unlikely to affect Mr. McCollum's risk for heat stress injury.
    - If he did not pick it up when he was at the HSJ, then the prescription is a red herring and was without effect on any risk for heat stress injury.
- Mr. McCollum endorsed diabetes. Morbid obesity is associated with carbohydrate intolerance even when diabetes is not present. It is unclear why Mr. McCollum endorsed diabetes when screened at the HSJ but not when screened at McLennan. Subsequent testing demonstrated that he was not diabetic (based upon blood sugar and glycosylated hemoglobin (A1C) levels without prior or current anti-diabetes medications). Mr. McCollum was not diabetic and had no increased risk for heat stress injury based upon diabetes. (Diabetic patients have no inherent increase of risk for heat stress injury.)
- Mr. McCollum did not have a hyperthyroid state. Although thyroid status was not included in the routine laboratory tests obtained during his stay at HSJ, he exhibited no specific symptoms or obvious signs suggestive that his thyroid function was increased and in fact exhibited a body habitus which itself essentially rules out the hyperthyroid state.

Mr. McCollum was not provided with housing restrictions when he was first received at HSJ. Should he have been provided with a bottom bunk? Many but not all morbidly obese persons have difficulty climbing to a top bunk. It would have been a best practice to place Mr. McCollum in a bottom bunk. However, not doing so did not demonstrate indifference to his needs:

- Mr. McCollum's record from McLennan clearly stated that he had no housing or assignment restrictions, making it reasonable to continue that status as HSJ personnel assessed his needs and became more familiar with them.
- Mr. McCollum had near daily opportunities to communicate directly with nursing and the continuous opportunity to submit a sick call request, an I-60 form or other written communication to an administrator, or a grievance regarding being on an upper bunk, if that was creating difficulty for him. He did none of these.
- Mr. McCollum had a nearly continuous opportunity to ask one of many correctional offices what to do if he believed that placement on an upper bunk was inappropriate. He had intermittent opportunities to ask other members of the UTMB staff (including the mental health clinician) what to do to if he believed that placement on an upper bunk was inappropriate. He never made this type of request.
- Mr. McCollum had an Offender Orientation Handbook (McCollum 89-199) that also explained these options.

Mr. McCollum may have disliked being on an upper bunk, but he took no action, simple or difficult, to complain about or effect a change in this placement. Mr. McCollum may have had difficulty climbing up and down from his bunk, but he managed to do so at least between 7/15/11 and 7/20/11, the latter time being when his dormitory-mates suggest he stopped going to meals or obtaining frequent drinks of water utilizing the water fountains (bubblers) in the bathroom or other water sources.

The answer to the question posed above is that he could have been provided with a bottom bunk and that it would have been a best practice, but not providing him, as a man with no identified disabilities, with a top bunk was reasonable and did not evidence any indifference to his needs. Mr. McCollum had many opportunities of many types to request a bottom bunk or complain about being in a top bunk.

Should correctional personnel have noted it when Mr. McCollum allegedly stopped going to meals?

The unit in which Mr. McCollum was housed was not a high security setting. It consisted of four separate dormitories with a total of approximately 230 beds under camera monitors. Inmates were commonly resting on their bunks when not assigned to work, recreation, or evaluation activities. The camera monitoring was designed more to identify active situations (such as fights, sexual assaults, or criminal behavior) that to identify resting inmates who might be "resting too long." Skipping a several meals across 2 days would not have been identified by camera monitoring.

Should meal monitoring have identified his changed behavior? Existing best practices in jails and prisons in the United States suggest that, in the absence of unusual circumstances such as insulin dependent diabetes, skipping meals does not constitute a problem until 3 days have passed. If the descriptions of Mr. McCollum skipping meals are correct, this only lasted 2 days. TDCJ personnel would have had no reason to raise any flags regarding this.

Comment on the roles of correctional officers and supervisory personnel in the delivery of clinical services to inmate patients:

Correctional officers and supervisory security personnel play an important but quite limited role in the delivery of health care services to inmates. The following characteristics are representative of and define this role:

- Security personnel never give up their responsibility to assure that Constitutional minimum standards are met. Even when a system is not self-operated, security personnel must assure that they and the health services personnel are not deliberately indifferent to serious medical needs.
- Security personnel must create a safe environment in which health services personnel can learn about patient needs, can access patients, and can deliver care.
- When off site care is needed, security personnel must facilitate this care, communicating with health services professionals when that is necessary.
- Security personnel must identify the presence of emergency situations and act when they are noted. (In this context it must be remembered that, despite first responder training that includes training such as Basic Life Support, with regards to health services, security personnel are laypersons, not health care professionals. Their abilities to recognize the degree of emergency are not comparable to that of clinical professionals.)

At all times TDCJ employees were reasonable, appropriate, and responsive to Mr. McCollum and attempted to facilitate the care that he required.

Response to selected portions of reports by Dr. Susi Vassallo and Mr. James Balsamo:

Dr. Susi Vassallo has noted that the receiving screening performed upon receipt of Mr. McCollum at HSJ included review of McLennan materials and that no physical examination was performed. She notes the history of hypertension and the change in treatment from PRN clonidine to daily hydrochlorothiazide. She notes the blood sugar of 130 mg/dL obtained on 7/20/11 at 0842 but is silent regarding whether or not this represented a fasting determination (if non-fasting, this is a normal finding; if fasting it was just outside the upper limits of normal).

She also notes that other inmates living around Mr. McCollum in his dormitory reported that he stopped eating and drinking in the days prior to his being found seizing.

Dr. Vassallo notes that human bodies dissipate heat by vasodilation and evaporative cooling, and cautions about humidity; this greatly oversimplifies the process. By limiting her comments on dissipation of heat she implicitly limits the means available to mitigate the risks of heat stress injury. For example, her limited comments ignore limitations in activity which decrease internal heat production.

Dr. Vassallo cites certain heat index findings from the period during which Mr. McCollum was resident at HSJ, but her citations appear to reflect the daily maximum. I doubt that she would have considered it appropriate simply to cite the daily minimums as a description of the heat to which Mr. McCollum was exposed; I consider it similarly inappropriate to consider only the daily maximums. While the maximums matter, it is the overall exposure to heat stress that creates increased risk, the so-called "area under the curve."

Dr. Vassallo describes that during officer rounds (presumably for count) on one occasion during the late evening of 7/21/11 an inmate other than Mr. McCollum presented Mr. McCollum's identification to the rounding officer. Officers conducting count are tasked with establishing positive identification of each inmate.

Dr. Vassallo notes that the dormitory was warm during her visit there in early fall and extrapolates from this that it would be "dangerously hot for anyone, especially for someone with Mr. McCollum's conditions, in July." To support this conclusion Dr. Vassallo should have considered the overall heat and humidity in the dormitory during July, the heat stress injury mitigation factors in place at the time, Mr. McCollum's condition, and Mr. McCollum's actions to comply with heat stress injury mitigation opportunities. Her experience of a warm housing unit in early fall is poor evidence regarding conditions in the housing unit during the summertime.

Dr. Vassallo provided an overall opinion which I will quote (Vassallo report page 6):

> "Mr. McCollum died of heatstroke because of his medical conditions and the extreme temperatures in which he was incarcerated and because officers ignored his life-threatening heat stroke, and delayed life-saving treatment or transport to a hospital for more than an hour. His death was entirely preventable. The inhumane temperatures in the cell led directly to his

death by heatstroke."

This statement is a mix of fact and fancy. Let me parse Dr. Vassallo's paragraph and comment on each piece; the **bolded** words in quotation marks are Dr. Vassallo's; my comments are not bolded and are further indented:

- "**Mr. McCollum died of heatstroke because of his medical conditions and the extreme temperatures in which he was incarcerated**"
    - Comment: Mr. McCollum was probably at increased risk for heat stress injury (including heatstroke) because of his morbid obesity but not because of any other medical condition. Also, Mr. McCollum was not psychotic or otherwise unable to take advantage of the multiple heat stress injury mitigation opportunities available to him. It remains unclear why he neither communicated any difficulties to correctional personnel nor why he stopped eating and drinking days before he was brought down by heat stress injury.
    - Comment: Mr. McCollum was confined in hot conditions but the word "extreme" connotes an overall assessment that ignores heat mitigation options in place while he was at HSJ.
- "**and because officers ignored his life-threatening heat stroke, and delayed life-saving treatment or transport to a hospital for more than an hour**."
    - Comment: Correctional officers did not ignore Mr. McCollum resting on his bunk.
        - Correctional officers were tasked with ensuring a peaceful low security housing setting, maintaining count, and responding to unusual circumstances. An inmate resting on his bunk is not unusual. Video monitoring supplemented this direct observation but officers watching the video would not have seen anything unusual as their eyes occasionally noted an inmate resting on his bunk.
        - When Mr. McCollum's seizure was brought to the attention of correctional officers, they performed in a manner consistent with their training, noting the abnormal occurrence and then seeking supervisory involvement, working up the chain of command as they tried to determine what was necessary. Correctional officers know that seizures are of immediate concern but are unlikely, as laypersons, to distinguish between the existence of a single seizure and status epilepticus. Seizures are not the typical "first presentation" for heat stroke. None of the responding security personnel were indifferent to Mr. McCollum's needs, although clearly they did not understand the urgency of the situation.
        - The term "delayed" carries the connotation that the time passed purposively and that personnel actively caused the delay; that is simply not correct. Personnel acted essentially immediately when Officer Clark was informed by an inmate and then tried to figure out how to handle the situation.
        - Clinical personnel would likely more rapidly have recognized that ambulance personnel were needed, but the passage of time between Officer Clark being informed regarding the seizure and the call being made to 911 (approximately an hour) are not evidence of indifference to Mr. McCollum's needs. The correctional officers were well aware that Mr. McCollum required medical attention but were not aware that this was a true emergency situation. It is doubtful that the outcome would have been any different had the call been made to 911 immediately.
- "**His death was entirely preventable**."

- Comment: Hindsight is always clear. Given that on 7/22/11 Mr. McCollum was felled by heatstroke and that he spent approximately the previous two days on his bunk, his death was likely preventable. However, the fact that the death could have been prevented does not mean that errors were made on the part of those who could have prevented the death. It does not mean that the death was reasonably foreseeable.

Dr. Vassallo's 21 points also reflect a mix of correct and incorrect conclusions. I will comment on each of her 21 points in the same manner as I did above, however I will summarize them rather than quote 5 pages of points. Again, the bolding reflects her points (as summarized by me):

1 **Dr. Vassallo: Heat stroke is a medical emergency; when it is present, quickly cooling the patient can be life-saving. This is recognized by both UTMB and TDCJ.**
Comment: This point is correct.

2 **Dr. Vassallo: Mr. McCollum was at markedly increased risk of heat stroke due to his medical conditions.**
Comment: Mr. McCollum was probably at some increased risk of heat stroke due to his obesity, but this risk cannot be quantified. It may have been large or small and was subject to mitigation according to the heat stress injury mitigation options available to him at HSJ. His other conditions (the possible hypertension and purported diabetes) did not contribute to his risk for heat stress injury.

3 **Dr. Vassallo: Diuretics such as hydrochlorothiazide increase the risk of heat stress injury by removing water from the body. They impair the ability of the heart to increase cardiac output, they cause dehydration, and they impair cooling.**
Comment: The dosage of hydrochlorothiazide was such that it would not be expected to cause measurable dehydration or decreased cardiac output. Even at higher doses this diuretic does not impair the heart's ability to increase cardiac output. So long as the heart can provide adequate blood to the skin (and this persists unless a near-shock state is present), skin vessels can dilate and facilitate cooling. Even more telling, there is no record that Mr. McCollum ever accepted even a single dose of hydrochlorothiazide (as would have been recorded by nursing personnel) and there is testimony on the part of other dormitory inmates that Mr. McCollum did not even leave his bunk for the last days prior to his seizing.

4 **Dr. Vassallo: Diabetes would also put Mr. McCollum at increased risk of heat stroke.**
Comment: Dr. Vassallo insisted at deposition that Mr. McCollum had diabetes, irrespective of the fact that his glucose test and more importantly his glycosylated hemoglobin did not meet the criteria established by the American Diabetes Association (and accepted by essentially all competent physicians) as diagnostic of diabetes. Consideration of whether even mild diabetes would cause an increased risk of heat stress injury is irrelevant to Mr. McCollum; he did not have diabetes.

5 **Dr. Vassallo: Mr. McCollum was morbidly obese and was "prevented from climbing up and down from the top bunk when he was ill." The point also notes that morbid obesity is associated with cardiac disease, diabetes, and heatstroke.**
Comment: It is not clear why Mr. McCollum stopped climbing up to and down from his bunk during the last days before he seized. At some point severe illness could cause someone to have increased difficulty climbing up and down, but certainly before this was occurring he could have requested assistance. Similarly, even if he failed to do this he could have asked his bunkmate to obtain help for him. His bunkmate demonstrated willingness to assist Mr. McCollum, reporting that he brought Mr. McCollum water when requested, providing Mr.

McCollum's identification card to the count officer, and reporting Mr. McCollum's seizure.

6 **Dr. Vassallo: Mr. McCollum was at increased risk of heat stress injury because of his multiplicity of conditions and his age.**

Comment: Whatever risk Mr. McCollum might or might not have had, nothing in this point suggests that the mitigation options available to him were inadequate to provide him with a safe environment.

7 **Dr. Vassallo: Mr. McCollum's bunkmate presented Mr. McCollum's identification during count, some hours prior to Mr. McCollum's seizure. This was a missed opportunity during which the officer should have insisted on assessing Mr. McCollum's status.**

Comment: This is alleged to have occurred during the late evening. The correctional officer was tasked with making positive identification of the inmates being counted, not awakening inmates who are peacefully sleeping.

8 **Dr. Vassallo: Cooling measures should have been implemented immediately upon discovering Mr. McCollum seizing; failure to do so was the proximate cause of Mr. McCollum's death.**

Comment: Security personnel are not clinical personnel. Implementation of cooling measures such as are suggested by Dr. Vassallo, including application of ice, would have required a diagnosis of heat stress injury.

9 **Dr. Vassallo: Mr. McCollum was discovered seizing at approximately 0210 on 7/22/11 and left the facility at approximately 0330. Dr. Vassallo believes that this 80 minutes spelled the difference between life and death for Mr. McCollum. She believes he should have been moved from his bunk to an air conditioned environment or that clinical cooling interventions should have been applied.**

Comment: Again Dr. Vassallo suggests that security personnel should have diagnosed heat stress injury and acted as clinical personnel to implement cooling measures. The statements from all involved custodial personnel reflected their desires to provide Mr. McCollum with reasonable "layperson" support, including working together to make a decision regarding what to do and staying with him to make certain he did not fall from his bed. There was no indifference. Additionally, Dr. Vassallo is aware that Mr. McCollum weighed 330 pounds. Security personnel could not safely have moved him from that location.

Dr. Vassallo's report has a second point also labeled "9."

Dr. Vassallo: Her second point "9" suggests that HSJ practices included delaying night time care until the morning.

Comment: There is no evidence that this is the practice and during deposition security personnel specifically denied this.

10 **Dr. Vassallo: Failure to provide around the clock medical staff where vulnerable people are housed is extremely dangerous and denies people access to potentially life-saving medical care.**

Comment: HSJ had in place processes which permitted security staff to obtain professional clinical advice by telephone. In part the clinical advice helped them determine when to utilize the nearby hospital and when not to do so. This is a reasonable manner in which to deliver care when overall demand for care is actually quite low. It does not represent indifference to medical needs.

11 **Dr. Vassallo: Mr. McCollum was improperly housed in an upper bunk. This contributed to his eventual heat stress injury first because he was unlikely to avail himself of heat stress injury mitigation measures and second because security and civilian staff had difficulty**

treating him when he seized.

Comment: Not every morbidly obese person has difficulty climbing up and down from a bunk. And there were no housing restrictions provided at his prior institution (McLennan) either, suggesting that unrelated jail personnel also believe him capable of dealing with an upper bunk. It is likely that Mr. McCollum developed inanition because of other factors and then stopped appropriately obtaining water or taking showers.

12 **Dr. Vassallo: Mr. McCollum was at high risk for heat illness because of his cardiovascular disease, his obesity, and his medications.**

Comment: Mr. McCollum was not known to have cardiovascular disease until after he was hospitalized; it is inappropriate to suggest that this risk should have been considered when Mr. McCollum was managed at HSJ. I have already commented on his obesity; Mr. McCollum would likely not have experienced heat stress injury had he continued to avail himself of the existing heat stress injury mitigation opportunities. And the only medication he might have been receiving was hydrochlorothiazide, which was prescribed at a dosage unlikely to affect his fluid and electrolyte status, much less to affect his susceptibility to heat stress injury.

13 **Dr. Vassallo: Mr. McCollum was sick for two days prior to his collapse (his seizure). He had abnormal laboratory values suggestive of dehydration but these were not reviewed. Had they been reviewed clinical personnel might have been alerted to his serious medical condition.**

Comment: Mr. McCollum had routine laboratory testing drawn, supplemented by a test for glycosylated hemoglobin based upon his endorsing a history of diabetes. None of the test results were so abnormal as to reach "panic value" levels, which would have resulted in a stat review. This routine laboratory testing was scheduled in such a way as to be available for review simultaneously with the health assessment (history and physical examination) scheduled within 7 days of confinement. Dr. Orig's email queue received the results on or about 7/21/11 and there was no reason to review these results before the anticipated 7-day health assessment. This process was reasonable and appropriate.

14 **Dr. Vassallo: Mr. McCollum should have had a physical examination during his confinement at HSJ. This would have identified his serious medical problems complicated by "extreme heat."**

Comment: Dr. Vassallo listed CCHP as one of her certifications. Therefore she should be fully aware that the receiving screening is carried out upon entry to the facility (which was accomplished) and that the health assessment (the physical examination) should be carried out within 7 days. Mr. McCollum was not confined at HSJ for 7 days and his health assessment would not have been overdue until on or after 7/23/11. Even if a physical examination had been carried out upon entry, it would have identified only his obesity and his (possible) hypertension. It is possible that he would have been provided a lower bunk but concluding that this would have avoided his eventual demise with heat stress injury is not supportable.

15 **Dr. Vassallo: This point suggests that it is medically necessary to provide a person with Mr. McCollum's physical condition and medication list with air conditioning or misters to mitigate risk for heat stress injury. Dr. Vassallo further suggests that any physician who would suggest otherwise is incompetent.**

Comment: Dr. Vassallo has identified two of many interventions available to mitigate the risk of heat stress injury for a morbidly obese man receiving a middling dose of hydrochlorothiazide for presumed hypertension. There are a host of others, many of which could have been utilized by Mr. McCollum if he had chosen to avail himself of them. Perhaps

Dr. Vassallo believes that inmates are like children and should not be provided with any responsibility for their own welfare. I disagree with her. I also disagree with her characterization of physicians who disagree with her; there are many ways to mitigate the risks associated with heat in addition to air conditioning and misters.

16 **Dr. Vassallo: "Reasonable accommodations" "would have likely saved Mr. McCollum's life. She also suggests that Mr. McCollum had disabilities.**

Comment: Dr. Vassallo has identified some of the many mitigations which could have helped prevent Mr. McCollum from developing an increased core body temperature but omits others which were actually in place. She also mentions again the cooling interventions that would have required security personnel first to have developed a clinical diagnosis. This has already been addressed. Mr. McCollum was described by McLennan as not having any disabilities and this information was provided to HSJ along when he was transferred there. Additionally the receiving screening did not identify any disabilities that might have been missed by McLennan. Given the assessment by McLennan and by the nursing personnel who performed receiving screening at HSJ, it is unclear to what disabilities Dr. Vassallo refers.

17 **Dr. Vassallo: This is a general statement that the measures in effect at HSJ were inadequate. She states that Mr. McCollum could not access water because he could not get in and out of his bunk, that fans are of no help, and that limiting labor during periods of high temperature did not benefit Mr. McCollum because he was unassigned. She suggests that housing limitations should be in effect for persons who are vulnerable (I assume by vulnerable she means at increased risk for heat stress injury).**

Comment: Dr. Vassallo refuses to understand that there are many interventions which reduce the risks for heat stress injury, and that Mr. McCollum did not suffer from any disability which prevented him for using them. We know that Mr. McCollum successfully transitioned in and out of his bunk for the first 5 days of his confinement. Her comment on fans is factually incorrect; circulating even hot air above body temperature aids in evaporative cooling of sweat, with its utility dependent upon temperature, relative humidity, and the amount of air movement facilitating evaporation. Because so many variables are involved, it is actually difficult to identify at what point evaporative cooling begins to fail for any given temperature and humidity.

18 **Dr. Vassallo: The conditions at HSJ created a "very high risk of heat stroke."**

Comment: High heat and humidity, without mitigation, created a very high risk of heat stroke. The simple truth is that Mr. McCollum was the only inmate at HSJ that developed heat stroke during the 2011 summer heat wave, and there is evidence that he ceased taking advantage of personal heat mitigation options approximately two days prior to his seizure. The mitigation measures in place worked; Mr. McCollum likely would not have developed heat stress injury had he not stopped drinking, showering, and so on.

19 **Dr. Vassallo: Mr. McCollum more likely than not died from heat stroke due to the lack of air conditioning.**

Comment: This identifies a single possible mitigation choice and makes it causal. Dr. Vassallo is incorrect; Mr. McCollum more than likely died from heat stroke due to his failure to take advantage of the multiple heat stress injury mitigation options available to him. Dr. Vassallo incorrectly identifies a single potential mitigation factor and describes it as if it is the only possible intervention available, and one that was required.

20 **Dr. Vassallo: Any licensed doctor, physician assistant or nurse would know about the increased risks of heat stroke for patients such as Mr. McCollum.**

Comment: I believe that it is conventional wisdom among health care professionals that

morbid obesity makes a patient more susceptible to heat stress injury. There is no evidence that the available mitigation options were inadequate. As to the possibility that diabetes or hypertension in some way increased Mr. McCollum's risk for heat stress injury, this is completely unsupportable.

21 **Dr. Vassallo: Mr. McCollum died suffering in pain.**
Comment: Mr. McCollum never complained to anyone that he was suffering or in pain. This is an opinion that is unsupported by the facts.

Mr. James Balsamo has reviewed the conditions found in the dormitory unit where Mr. McCollum resided. He noted that the unit is served by a mechanical fan-based ventilating system. His measurements of that system indicated that it was working properly and that air movement met the standards that he used for comparison purposes.

Mr. Balsamo noted the presence of water jugs but not of water fountains. He visited the bathroom and noted sinks. He apparently did not realize that every sink fixture doubled as a drinking fountain, because every sink spout was a bubbler fixture. Bubbler fixtures such as are contained in the HSJ bathrooms are very common in correctional settings. (See the photograph listed in the document list.) Mr. McCollum actually had access to a large number of water fountains in his housing unit.

Mr. Balsamo identified the challenge of determining at what temperature level moving air no longer facilitates a body's heat loss. He made the assumption that this occurs at body temperature 98.6 F, but this is incorrect. Evaporative heat loss will still occur in air at this temperature, depending upon the relative humidity, the amount of air movement, and other factors described earlier in this report. (It may be that Dr. Vassallo relied upon Mr. Balsamo when she discussed this issue.)

Mr. Balsamo correctly concludes that the HSJ housing unit is a hot environment during the summertime. I have no doubt that it is uncomfortable. He further notes (on page 12 of his report) that the mitigation measures implemented by TDCJ were adequate for healthy inmates but questioned whether they were adequate for those at increased risk for heat stress injury. He opines that various measures could be helpful and concludes that placing such inmates in air conditioned settings would be the simplest and most effective. He cites the CDC recommendations for general community populations as part of his reasoning for this. In actuality it is the responsibility of the TDCJ to review the risks and determine which heat stress mitigation measures should be used, and this is precisely what TDCJ did. Had Mr. McCollum continued to avail himself of the mitigation measures available, he would have survived.

Mr. Balsamo either glosses over or does not understand that risk for heat stress injury is not an "all or nothing" phenomenon.

Mr. Balsamo correctly concludes that the heat levels found in the summer in Texas and specifically at the HSJ create risk for heat stress injury. He also correctly concludes that mitigation measures should be implemented. Unfortunately, he goes further, advising specifically which mitigation measures ought to be implemented rather than leaving this determination to TDCJ.

Response to additional issues from the 2nd Amended Complaint:

Many of the Complaint's allegations have already been addressed. I will reiterate some of my comments already put forth in the previous pages and make some additional observations.

Mr. McCollum was obese and may have had mild hypertension. He was probably depressed, although it is not clear if any "current" depression was clinically severe or simply related to being back in confinement for felony time. He did not have diabetes. He was probably at increased risk for heat stress injury from his obesity but not from any other medical condition. To the extent that the Amended Complaint maximizes its descriptions of the risks associated the various conditions listed it is disingenuous.

Mr. McCollum was not considered disabled by McLennan or by receiving personnel at HSJ. Mr. McCollum was apparently of normal intelligence. He never claimed that he was disabled or requested that he be provided with any accommodation for any perceived disability. For the first 5 days of his confinement he went to meals and acted appropriately in the housing unit, and attended all scheduled diagnostic and guidance screenings. Certainly during this initial period any unidentified disability that he might have had was not interfering with his activities of daily living, including his use of an upper bunk.

It is not known why he stopped leaving his bunk. However, once he did, his actions became inadequate to cope with the heat. This was unpredictable and could not have been anticipated simply because he was obese and might have had high blood pressure.

The receiving screening that is described in the Complaint as a "self-assessment" is actually a relatively standard "other-administered" health history similar to what is performed at almost every jail and prison in the United States. To the extent that this Amended Complaint expects a "stat" history and physical examination at the point of entry it fails to appreciate both how unnecessary that is and how much the receiving screening process already exceeds what is available in the outside community when inmates leave confinement. The receiving screening represents a proactive attempt to identify the most salient clinical needs so that care can be provided in a continuous manner.

Mr. McCollum would have benefitted from a bottom bunk, but he did not require one. Apparently, despite knowledge of how he could have complained and/or requested a bottom bunk, and many opportunities to make such a request, he never did so to any of the defendants. This suggests that his self-assessment of his need for a bottom bunk was little different from that of the TDCJ personnel.

The housing unit in which Mr. McCollum resided was hot. There were many mitigation options available to TDCJ to implement to help inmates cope with the heat, and many were implemented. TDCJ did not choose to implement refrigerated air as one of them, and the Amended Complaint suggests that this should have been accomplished. TDCJ was responsible to mitigate the risks but not necessarily in the manner suggested by the Amended Complaint. The broad success with which heat stress injury mitigation was addressed is underscored despite the deaths associated with the 2011 heat wave. Certainly there were no other such occurrences at HSJ.

Nighttime coverage by telephone with an identified clinical support nurse was not unreasonable. Nursing personnel do not need to make a diagnosis to provide advice and direction regarding use of immediate care by use of local emergency rooms

Summary of major opinions:

1 Mr. Lawrence Eugene McCollum was received at the HSJ from McLennan, where he had been housed without restrictions. During his confinement there he was not noted to have any disabilities. Treatment for hypertension was initiated, but during his stay there he only received 4 doses of medication. Hypertension may have been an incorrect diagnosis.

2 Mr. McCollum was transferred from McLennan to the HSJ on 7/15/11. He provided a health history, together with information received from McLennan suggestive of hypertension, diabetes, depression, and obesity. He was not thought to be in need of immediate interventions. He was prescribed routine antihypertensive medication (hydrochlorothiazide), but there is no evidence that he ever picked up the prescription. He was provided with routine laboratory testing and skin testing for tuberculosis, and along with the routine testing he was tested for glycosylated hemoglobin, a test used in the diagnosis and management of diabetes. The testing was returned the day before Mr. McCollum seized and was sent to the hospital. It was suggestive of mild dehydration and inadequate nutritional intake. His glycosylated hemoglobin result indicated that he did not have diabetes.

3 Mr. McCollum did not have diabetes mellitus.

4 For approximately two days prior to his seizure Mr. McCollum remained in his bunk, not eating, and drinking only water brought to him by his bunkmates. It is unknown when he began to decrease his water intake.

5 In the early morning hours of 7/22/11, Mr. McCollum was noted to be shaking. An inmate alerted security personnel, who reported to the scene, obtained supervisory personnel, and attempted to determine how to proceed. After 30-40 minutes of continuing seizures, security personnel contacted their clinical support at another facility. They called for an ambulance, which arrived shortly after 0300 and left the facility with Mr. McCollum at approximately 0330.

6 Upon leaving the facility and at arrival to Parkland Hospital Mr. McCollum's body temperature was approximately 104 F, but it shortly rose to about 109 F (paradoxically it seems that his temperature rose during the initial application of cooling interventions). Mr. McCollum was admitted and provided with supportive care, but he never regained consciousness. He died on 7/28/11.

7 TDCJ officials were aware of the risks associated with heat exposure and implemented broad measures to mitigate those risks, including risks present in the housing units.

8 Mr. McCollum, although morbidly obese, did not require activity or housing restrictions.

9 TDCJ officials could not have predicted that Mr. McCollum, who was competent and not psychotic, would not avail himself of the mitigation measures in place, or that he would simply remain in his bunk for two days.

10 Mr. McCollum, as a morbidly obese person, was probably at some increased risk for heat stress injury. This increase cannot be quantified. It is more likely than not, and to a reasonable degree of medical certainty, that if he had availed himself of the heat stress injury mitigation opportunities in place at HSJ, he would not have developed heat stroke. For reasons known only to Mr. McCollum, he did not even request assistance during the days prior to his seizure.

11 The so-called "delay" in providing definitive care lasting about an hour during the early morning hours of 7/22/11 did not affect the eventual outcome and did not contribute to Mr. McCollum's death. TDCJ security personnel acted reasonably while they, as laypersons, strove to care for Mr. McCollum to the best of their abilities. There was no indifference on the part of TDCJ personnel to Mr. McCollum's serious medical needs.

12 TDCJ met the expectations for conditions of confinement identified in Ruiz, including ventilation requirements. TDCJ officials had every reason to believe that, so long as these conditions were met, they would be managing the TDCJ in a manner consistent with Constitutional requirements. Constitutional requirements evolve, but it remains within the TDCJ's purview to identify and implement heat mitigation policies and procedures that are effective, whether or not they provide comfort to individual inmates. Their responsibility is to maintain Constitutionally acceptable conditions, not to provide comfortable settings.

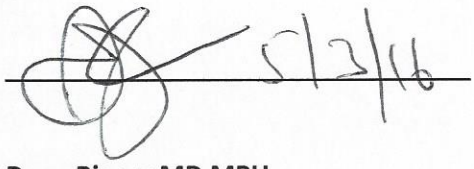
13 TDCJ met ACA standards with regards to health care. When it was surveyed, the HSJ coverage schedule was available to the surveyors (and it can safely be assumed that they knew there were nightly periods during which coverage was obtained by telephone consultation from the Crain facility). This coverage was not considered problematic by the ACA.

14 Additional heat stress risk mitigation interventions could be implemented by TDCJ. However, the ones in place during summer 2011 would have worked to prevent Mr. McCollum from developing serious heat stress injury had he availed himself of them. If TDCJ implements additional risk mitigation options, that should not be interpreted as indicating that they were required in 2011 or that not having implemented them sooner evidences any failure on their part. The heat stress injury mitigation practices in place at HSJ in 2011 were acceptable.

Closing:

I hold the above opinions to a reasonable degree of medical certainty based on my education, training, and experience, which includes providing and supervising health care services in correctional facilities and systems.

I reserve the right to amend my opinions if additional information becomes available and is provided to me.



Dean Rieger MD MPH

OPINION OF DEAN RIEGER MD MPH
Stephen McCollum et al v. Brad Livingston et al
USDC Northern District of Texas, Dallas Division
No. 3:12-cv-02037

Alphabetical list of materials used or relied upon in developing my opinions:

- ACA Accreditation Documentation 5/2/2010
- Affidavit concerning cost and necessity of medical services (billing) Parkland Health and Hospital System
- Correctional Managed Health Care Policy A-08.4 "Offender Medical and Mental Health Classification," 10/14
- Correctional Managed Health Care Policy B-15.2 "Heat Stress" 11/07
- Defendant University of Texas Medical Branch's Answer to Plaintiff's (McCollum) Second Amended Complaint
- Defendant's Answer to Plaintiff's Complaint
- Defendants Livingston, Eason, Pringle, Clark, Tate, Sanders, and TDCJ's Answer and Jury Demand to Plaintiff's Second Amended Complaint
- Defendants' Answer to Plaintiffs' Second Amended Complaint
- Defendants' Answer to Plaintiffs' Second Amended Complaint Exhibits A, B, and C
- Depositions
    - Glenda M. Adams MD
    - Ananda Babbili PA-C
    - James Balsamo Jr.
    - Richard Clark
    - Ben Leeah MD
    - Owen Murray MD
    - Sandrea Yvonne Sanders
    - Karen Sue Tate
    - Susi Valsallo MD
- Emergency Action Center Report McCollum 4254-4308
- Expert Reports
    - Glenda M. Adams MD
    - James Balsamo Jr.
    - Roger Clark
    - Ben Leeah MD
    - Susi Valsallo MD
- Heat Precaution Reminder 2011 (5/6/2011) TDCJ 4805-4825
- Intake Procedures Manual
- Itemized statement for ambulance services for McCollum
- M&M Committee Review (McC0llum 4044-4047)
- Medical Records
    - McLennan County Jail Bates 2931-2955
    - Parkland Hospital Bates 1671, 1698-2930
    - TDCJ/UTMB
- Medication Compliance Data from TDCJ regarding McCollum covering 7/1/2001 through 1/12/2004

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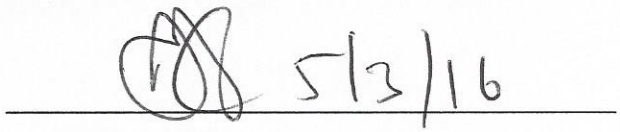
- Offender Orientation Handbook 11/2004
- Office of the Inspector General Investigation
- Photograph of housing unit sinks
- Plaintiff's Second Amended Complaint
- TDCJ Administrative Directive AD-10.61 (rev 6) 11/10/2008
- TDCJ Defendants' Answer to Plaintiff's Second Amended Complaint
- TDCJ Operational Procedure/Hutchins Unit April 15,2012 Extreme Heat Precautions
- *Exertional heat illness in adolescents and adults: Epidemiology, thermoregulation, risk factors, and diagnosis*, www.uptodate.com
- Various McCollum medical records and other information labeled Exhibits 1-10 from Babbili deposition
- Various security and classification records concerning McCollum - McCollum 5976-6022 (TDCJ)
- Various security and classification records concerning McCollum – 2997-3010 (McLennan County)



Dean Rieger MD MPH